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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,177	04/13/2004	Oleg S. Fishman	1946-009US	3715
31855	7590	02/14/2006	EXAMINER	
PHILIP O. POST INDEL, INC. PO BOX 157 RANCOCAS, NJ 08073			HOANG, TU BA	
			ART UNIT	PAPER NUMBER
			2832	

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/823,177	Applicant(s) FISHMAN ET AL.	
	Examiner Tu Ba Hoang	Art Unit 2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07/05/05.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Response to Amendments/Arguments

Applicant's arguments/amendments filed July 05, 2005 have been considered but are moot in view of the new ground(s) of rejection as follow:

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, there is insufficient antecedent basis for "the induction crucible" recited as line 4 in the claim. It is noted the claim now amended to recite "a crucible" at line 1, therefore the term "induction" should be deleted.

In claim 3, there is insufficient antecedent basis for "the exterior of the induction furnace" recited at line 4 in the claim. It is unclear if applicant intended for "the exterior of the crucible". It seems that the crucible and the induction furnace are the same element. clarification is needed.

In claim 7, the phrase "by the method" recited at line 2 should be deleted since such method is the same as "A method" recited in the preamble.

In general, it appears that both the "vacuum chamber" and the "induction furnace" are intended to be the same or equivalent element. It is suggested that the preamble of the claim should be rewritten. For example, "An induction vacuum furnace comprising a vacuum chamber in which a crucible..... and etc".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Blackwell et al (US 2,165,742). Blackwell et al shows a vacuum chamber 10 in which an induction furnace having a crucible or susceptor 38 disposed therein to inductively heat an electrical conductive material by a magnetic field generated around an ac current carrying induction coil 13 that is disposed around the exterior of the crucible 38 and inside the vacuum chamber 10, wherein at least a portion of the wall of the vacuum chamber 10 penetrated by the magnetic field during operation of the induction furnace comprises an inner layer of copper composition or copper shield 11 (page 2, column 1, line 47) and an outer layer or external stiffening bands 12 providing as means of structural support for the wall (page 2, column 1, lines 47-48).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blackwell et al in view of McKibben (US 1,971,195) cited in the previous Office Action. Blackwell et al discloses substantially all feature of the claimed invention except for the thickness of the inner layer or wall of the casing is at least equal to one standard depth of the penetration of eddy current induced from the penetration of the magnetic field. McKibben discloses the thickness of the inner layer or wall of the casing is at least equal to one standard depth of penetration of eddy current induced from the penetration of the magnetic field (page 1, column 2, lines 51-53 and page 2, column 1, lines 6-8, i.e., minimum thickness of the wall is determined with reference to the depth of magnetic penetration). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the thickness of the inner layer of Blackwell et al with the thickness taught by McKibben in order to improve and provide proper shielding for the chamber.

Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blackwell et al in view of W. O. Krebs (US 1,940,256) cited in the previous Office Action. Blackwell et al discloses substantially all features of the claimed invention except for the use of a susceptor disposed to heat a material placed within the susceptor by the generating a magnetic field around an ac current carrying induction coil to inductively heat the susceptor. It is noted that depend upon the type of material to be heated, either ferrous or non-ferrous metals, the use of a crucible or vessel including a susceptor or metal jacket in vacuum induction heating is well known, as evidence, W.O. Krebs shows the use of a melting pot or crucible 5 including a susceptor or metal jacket 7 used in

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combination with a refractory lining 5' and filling material 5". It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Blackwell et al the melting pot or crucible having such susceptor or metal jacket taught by W.O. Krebs in order to heat the melting pot by induce eddy current of the magnetic field generated by the coil into the metal jacket thereby heat the material (in the case of non-ferrous metals) or to heat the material by direct induction heating (in the case of ferrous metal or irons or conductive materials in general) by induce eddy current directly into the material to be heated.

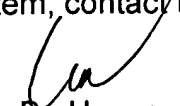
Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blackwell et al in view of W. O. Krebs (US 1,940,256) as applied to claims 5 and 7 above and further in view of McKibben (US 1,971,195). Blackwell et al in view of W. O. Krebs disclose substantially all features of the claimed invention as noted above except for the thickness of the inner layer or wall of the casing is at least equal to one standard depth of the penetration of eddy current induced from the penetration of the magnetic field. McKibben discloses the thickness of the inner layer or wall of the casing is at least equal to one standard depth of penetration of eddy current induced from the penetration of the magnetic field (in the same manner noted above). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the thickness of the inner layer of the vacuum chamber wall in the furnace of Blackwell et al in view of W. O. Krebs with the thickness taught by McKibben in order to improve and provide proper shielding for the chamber.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Gassen (US 3,046,320) and Taylor (US 3,180,633).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu Ba Hoang whose telephone number is (571) 272-4780. The examiner can normally be reached on Mon-Thu from 8:00AM to 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tu Ba Hoang
Primary Examiner
Art Unit 2832

February 09, 2006